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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,133	12/06/2000	Yujiro Ito	450100-02880	8693

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EXAMINER	
HENN, TIMOTHY J	

ART UNIT	PAPER NUMBER
2612	5

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/731,133	Applicant(s) ITO ET AL.	
	Examiner Timothy J Henn	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 December 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: θ1 and θ2 (see specification p. 14, ll. 17-19). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: replace "0band" with --band-- on page 10, line 10.

Appropriate correction is required.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The office notes that the title could apply equally well to almost any auto-focus system and does not indicate the specific type of auto-focus system of the present application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-6, 8-11, 13-16, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US 4,470,681).

[claim 1]

In regard to claim 1, note that Johnson discloses an auto-focus apparatus (e.g. Figure 2) comprising: emitting means (Figure 2, Item 40) for emitting an irradiation wave for irradiation to a subject while changing an emitting angle of said irradiation wave (c. 7, ll. 43-49); detecting means (Figure 2, "PHOTODETECTOR") for detecting an incident angle of a reflected wave of said irradiation wave reflected by said subject, incident on light receiving means positioned corresponding to said emitting means (c. 6, ll. 44-62); determining means for determining based on said emitting angle and said incident angle whether or not said subject is a subject for which the focus should be adjusted (c. 9, ll. 35-50; The office notes that the incident angle is used in the form of a distance measurement and the emitting angle (i.e. scene position of the measurement) is used to

determine the weight to give the measurement); and adjusting means for adjusting the focus on said subject when determining that said subject is the subject for which the focus should be adjusted (Figure 2, Item 26; c. 5, ll. 5-38).

[claim 3]

In regard to claim 3, note that Johnson discloses emitting means that controls emission power (i.e. ON or OFF) of the irradiation wave in accordance with a change in the emitting angle of the irradiation wave (c. 5, l. 39 - c. 6, l. 12; The office notes that the LED is activated by the pulse generator as the lens elements 48a and 48b are moved to change the emitting angle (i.e. activated in accordance with the change in angle)).

[claim 4]

In regard to claim 4, note that Johnson discloses determining means that comprises a storage means for storing sampling data of the emitting angle (i.e. scene position) and the incident angle (i.e. distance measurement) (c. 9, ll. 57-60).

[claim 5]

In regard to claim 5, note that Johnson discloses storing correspondence data of the emitting angle (i.e. scene portion) and the incident angle (i.e. distance measurement) (c. 9, ll. 57-60; The office notes that the measurement data can also be read as "correspondence data" since one item of the first set (i.e. scene portion) corresponds to one of the second set (i.e. distance measurement)).

[claims 6 and 8-10]

Claims 6 and 8-10 are method claims corresponding to apparatus claims 1 and 3-5. Therefore, claims 6 and 8-10 are analyzed and rejected as previously discussed

with respect to claims 1 and 3-5.

[claim 11]

In regard to claim 11, note that Johnson discloses an image capturing apparatus (e.g. Figure 2) comprising: emitting means (Figure 2, Item 40) for emitting an irradiation wave for irradiation to a subject while changing an emitting angle of said irradiation wave (c. 7, ll. 43-49); detecting means (Figure 2, "PHOTODETECTOR") for detecting an incident angle of a reflected wave of said irradiation wave reflected by said subject, incident on light receiving means positioned corresponding to said emitting means (c. 6, ll. 44-62); determining means for determining based on said emitting angle and said incident angle whether or not said subject is a subject for which the focus should be adjusted (c. 9, ll. 35-50; The office notes that the incident angle is used in the form of a distance measurement and the emitting angle (i.e. scene position of the measurement) is used to determine the weight to give the measurement); and adjusting means for adjusting the focus on said subject when determining that said subject is the subject for which the focus should be adjusted (Figure 2, Item 26; c. 5, ll. 5-38).

[claim 13]

In regard to claim 13, note that Johnson discloses emitting means that controls emission power (i.e. ON or OFF) of the irradiation wave in accordance with a change in the emitting angle of the irradiation wave (c. 5, l. 39 - c. 6, l. 12; The office notes that the LED is activated by the pulse generator as the lens elements 48a and 48b are moved to change the emitting angle (i.e. activated in accordance with the change in angle)).

[claim 14]

In regard to claim 14, note that Johnson discloses determining means that comprises a storage means for storing sampling data of the emitting angle (i.e. scene position) and the incident angle (i.e. distance measurement) (c. 9, ll. 57-60).

[claim 15]

In regard to claim 15, note that Johnson discloses storing correspondence data of the emitting angle (i.e. scene portion) and the incident angle (i.e. distance measurement) (c. 9, ll. 57-60; The office notes that the measurement data can also be read as "correspondence data" since one item of the first set (i.e. scene portion) corresponds to one of the second set (i.e. distance measurement)).

[claims 16 and 18-20]

Claims 16 and 18-20 are method claims corresponding to apparatus claims 11 and 13-15. Therefore, claims 16 and 18-20 are analyzed and rejected as previously discussed with respect to claims 11 and 13-15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2, 7, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 4,470,681).

[claim 2]

In regard to claim 2, note that Johnson discloses the use of a infrared LED as the active ranging device of Figure 2 (c. 5, ll. 42-54). Therefore, it can be seen that Johnson lacks an eye safe laser diode. However, it is well known in the art to use eye safe (i.e. emitting light in the far infrared range) laser diodes for illumination purposes to ensure safe operation of the system (Official Notice). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an eye safe laser diode in place of the infrared LED of Johnson to ensure safe operation of the system.

[claims 7, 12 and 17]

In regard to claims 7, 12 and 17, see claim 2.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art further shows the current state of the art in active ranging systems which change an emitting angle of the range finding light:

i.	Kaneda et al.	US 4,623,237
ii.	Sorimachi et al.	US 4,660,969
iii.	Nonaka et al.	US 5,264,892

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Henn whose telephone number is (703) 305-

8327. The examiner can normally be reached on M-F 7:30 AM - 5:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
6/29/2004

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SUPERVISORY PATENT EXAMINER
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